

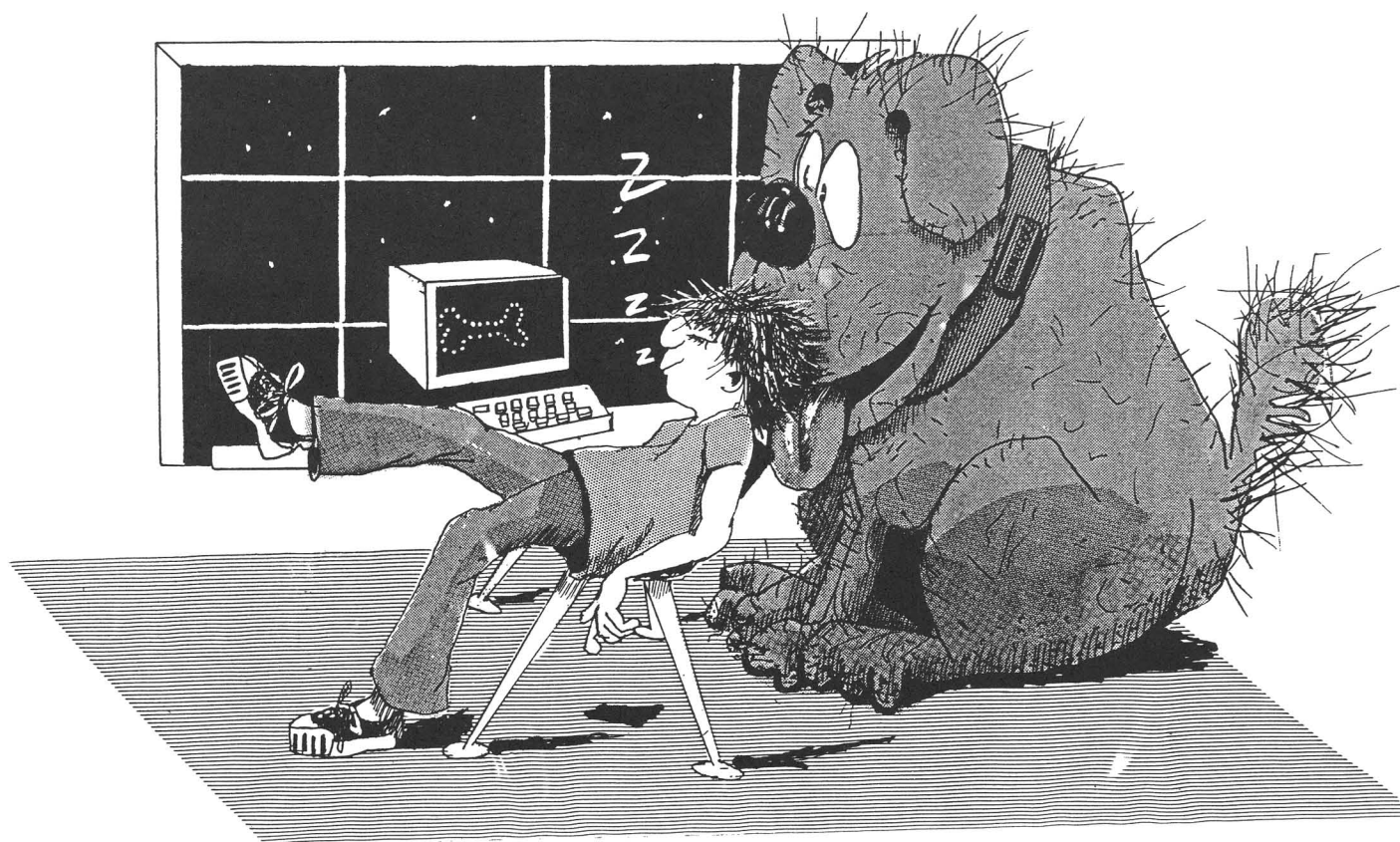
Issue 40

Volume 9, No. iii

# Midnite Software Gazette

The First Independent U.S. Magazine for users of Commodore brand computers.

Includes The PAPER



## 100,000 CHOOSE COMAL USERS†

### (1) DISK BASED COMAL Version 0.14

- COMAL STARTER KIT—Commodore 64™ System Disk, Tutorial Disk (interactive book), Auto Run Demo Disk, Reference Card and COMAL FROM A TO Z book. \$29.95 plus \$2 handling

### (2) PROFESSIONAL COMAL Version 2.0

- Full 64K Commodore 64 Cartridge  
Twice as Powerful, Twice as Fast  
\$99.95 plus \$2 handling (no manual or disks)
- Deluxe Cartridge Package includes:  
COMAL HANDBOOK 2nd Edition, Graphics and Sound Book, 2 Demo Disks and the cartridge (sells for over \$200 in Europe). This is what everyone is talking about. \$128.90 plus \$3 handling (USA & Canada only)

### CAPTAIN COMAL™ Recommends:

The COMAL STARTER KIT is ideal for a home programmer. It has sprite and graphics control (LOGO compatible). A real bargain—\$29.95 for 3 full disks and a user manual.

Serious programmers want the Deluxe Cartridge Package. For \$128.90 they get the best language on any 8 bit computer (the support materials are essential due to the immense power of Professional COMAL).

### ORDER NOW:

Call TOLL-FREE: 1-800-356-5324 ext 1307 VISA or MasterCard ORDERS ONLY. Questions and information must call our Info Line: 608-222-4432. All orders prepaid only—no C.O.D. Send check or money order in US Dollars to:

**COMAL USERS GROUP, U.S.A., LIMITED**  
5501 Groveland Ter., Madison, WI 53716

TRADEMARKS: Commodore 64 of Commodore Electronics Ltd., Captain COMAL of COMAL Users Group, U.S.A., Ltd.  
† estimated

## JOIN THE ON-LINE COMMODORE® USER GROUP.

Imagine being part of a nationwide on-line user group. With new QuantumLink, you can instantly exchange ideas, information and software with Commodore users everywhere, and participate in live discussions with Commodore experts.

That's just one of hundreds of features available. If you already have a modem, you can register on-line for a free software kit and trial subscription. Hook up and call **800-833-9400**. If you need a modem, call QuantumLink Customer Service at 800-392-8200.

**QUANTUMLINK™**  
The Commodore® Connection

(C)opyright 1987

Midnite Press/Midnite Software Gazette

All rights reserved

Published by:

Midnite Press/  
Midnite Software Gazette  
1212 Hagan  
Champaign, IL 61820  
Robert Wolter, Publisher  
James A. Oldfield, Jr.  
Timothy B. Sickbert  
Art Lewis Kimball  
Dr. Elizabeth Kaspar  
Art Lewis Kimball  
Robert Baker  
Dr. Richard Immers  
Mike Stout

Editor-in-Chief:

Editor:

Art Director:

Education Editor:

Assoc. Editors:

Address correspondence to:

Midnite Press/MSG  
P.O. Box 1747  
Champaign, IL 61820  
(217) 356-1885  
(217) 356-8056  
300/1200 baud, Punternet 35  
Issue #40  
Vol: 9, #3

**Midnite:**

**The Paper**

All contents Copyright 1987, Midnite Press/Midnite Software Gazette. A one year subscription gives you twelve issue of the **Midnite Software Gazette/The Paper**. User groups with non-profit status may reprint selected material from this issue provided that credit is given to the **Midnite Software Gazette**, P.O. Box 1747, Champaign, IL 61820, and the author of the material. The Midnite Press/Midnite Software Gazette does, however, retain copyright to all material published within the **Midnite Software Gazette** unless otherwise specified.

The opinions expressed in the **Midnite** are not necessarily those of the Midnite Press/Midnite Software Gazette, nor its publisher. All material accepted for publication in the **Midnite** becomes the property of Midnite Press/Midnite Software Gazette. The staff of the **Midnite** strives for accuracy, but the Midnite Press/Midnite Software Gazette cannot assume any liability for errors in articles, reviews, or programs published in the **Midnite**.

The Midnite Press/Midnite Software Gazette reserves the right to accept or refuse any advertisements submitted for publication.

Commodore, PET, VIC-20, C-64, C128, 64C, 128D, Amiga, PC-10, PC-20, B-128, and KIM are all copyrights and or trademarks of Commodore Electronics Ltd.

---

# Midnite Software Gazette

The first Independent U.S. Magazine for users of Commodore brand computers.

---

Commodore keeps building bigger and better computers and, although I confess that I do not watch much television, they seem to be keeping the same marketing strategy. CBM recently announced the release of the Amiga 500 and the Amiga 2000. The C128 has been out for a good eighteen months and I have yet to see an advertisement for it outside of half-a-dozen computer magazines that support Commodore computers anyway. Commodore has an astounding share of the home computer market - 27% according to the 2 March issue of *Computer + Software News* (page 29) - which they have earned with their good computers at low prices. Of users intending to buy, however, only 10% indicated that they intended to buy a Commodore computer. This gives Commodore the highest installed base in the home market, but it is third, behind Apple and IBM, on intent to buy. Atari, incidentally, is credited with 4% of the installed home market share, and 1% of the intent to buy. In any case, Commodore needs to adopt some aggressive, or at least assertive, marketing strategies if they are going to keep on selling computers. And boy, do they have some good computers to sell!

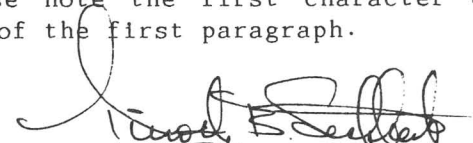
The Amiga 500 will be a slightly scaled down and lower cost version of the current Amiga 1000, priced to compete directly with the Atari ST and other home market machines. The Amiga 2000 will be just a little bit short of a dream machine, offering megabytes of RAM, a faster clock, and built in MS DOS compatibility - all the way up to plans for a plug-in AT board. With this kind of setup, it is conceivable that users would be able to multi-task Amiga programs with AT programs at the same time, cutting and pasting between the two systems almost at will.

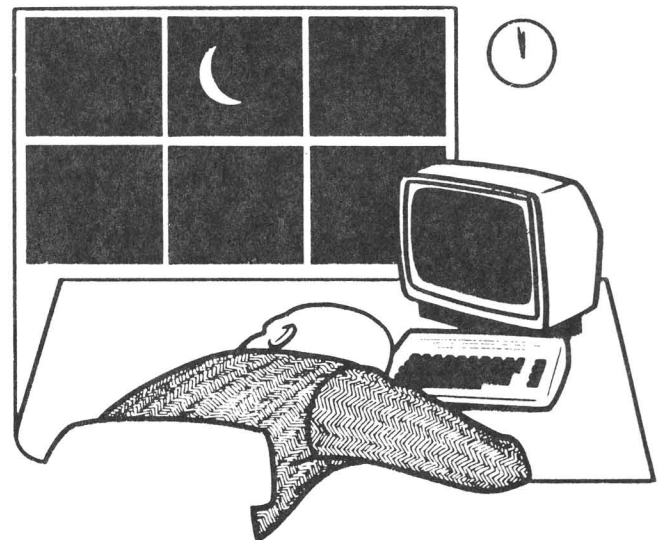
With a base price in the \$1500 range, users should be able to start from scratch and build full configurations - including the PC board with its own RAM; monitor; printer; a couple of big name programs; an extra disk drive or two, plus a hard

drive; a printer; modem; etc. - for under \$3500. That sounds like quite a bit of money, but it is much more computer than you can get from anybody else for less than \$5000. As always, though, this is simply the announced computer and predicted prices. Nothing matters until you can get it off the shelf, and little matters if Commodore does not promote it as the dream machine that it is. The Amiga 2000 could, with a bit of promotion in the right places, work its way into corporate offices. Once there, executives could become quickly spoiled by built-in multi-tasking, fast processing, and the ability to run spreadsheets, telecommunication programs, and a football simulation all at the same time.

We will review these new Amiga computers, the 1581 disk drive, the C128D, and whatever else Commodore would like to spring upon us as soon as they become available on the market.

Finally, if any of you are still disturbed by the rumors reported in the my editorial in the second column of page 1 of last month's issue (#39, Vol 9, Issue II), please note the first character of each line of the first paragraph.

  
Timothy B. Sickbert



### ERRATA

In issue #38, several reviews appeared in which Electronic Arts products were incorrectly identified as being distributed by another company. We wish to apologize to Electronic Arts for this error and to our readers for any inconvenience this might have caused them in trying to find the product.

The correct product identification appears here:

EXODUS: ULTIMA III: \$49.95 (C64) \$59.95 (Amiga) fantasy/role playing game on disk. From Origin Systems, distributed by Electronic Arts.

STAR FLEET I: \$39.95 (C64) \$55.00 (Amiga) space simulation on disk. From Interstel, distributed by Electronic Arts.

AMERICA'S CUP: \$24.95 strategy game on disk for C64. From Electronic Arts.

ARCTIC FOX: \$39.95 arcade/combat simulation/strategy game on disk for Amiga. From Electronic Arts.

Two other errors occurred in issue #38, for which we apologize and which we here correct:

SUPERKIT 2.0: (Issue #38, p19.) \$29.95 disk copy utility for the C64 and 1541. From Prism Software. The text of the review erroneously reports that the Single Normal Copy with Verify locks up the machine. The table correctly indicates that the Single Normal with Verify works correctly, and that the Single Nibbler with Verify does not work. W. H. Lambdin

HARDBALL: (Issue #38, p18.) \$18.95 baseball arcade simulation on disk for the C64, from Accolade. The program does not all an outfielder who runs in too far to catch a ball to run back. W. H. Lambdin

---

---

## Books

---

---

128 MACHINE LANGUAGE FOR BEGINNERS: \$16.95 book, 8502 machine language beginner's tutorial. By Richard Mansfield, from Compute! Books. Includes LADS assembler. Optional disk available for \$12.95

The style of this book is simple and easy to read. It doesn't expect you to know anything about machine language. Eleven chapters and seven appendixes cover addressing, arithmetic, the instruction set, BASIC routines, ML equivalents of BASIC commands, built in routines, instructions to use the LADS assembler, and, most important, a memory map.

LADS is a two pass assembler, and assembles the source very quickly. You can assemble to memory or to disk. The assembler is, however, incompatible with the Access Mach 128 cartridge. HIGHLY RECOMMENDED. W. H. Lambdin.

SCIENCE & ENGINEERING FOR THE COMMODORE 64: \$19.95 book for mathematically minded users of the C64. By Ranier Bartel, from Abacus Software. Program disk optional, sometimes included. Calculus optional, but very desirable.

Computers are often thought of as number crunchers, but Commodores are usually used for word processing, telecommunicating, graphics, and sound... plus a few spreadsheets and databases. But, Commodore computers are capable of some pretty heavy duty number crunching, and this book can give interested users a good start into getting their computers doing mathematics beyond simple arithmetic. If you are interested in playing, or need to work, with higher mathematics on your Commodore, this is an excellent place to start. RECOMMENDED. Tim



---

## Education

---

**TALKING TEACHER:** \$... package of 3 programs on disk for the C64, manual/coloring book, and 6 crayons. From Firebird Licensees.

The purpose of these three programs is twofold: to teach young children the alphabet, and how to pronounce the initial letters in approximately 130 words. Firebird's claims that the programs are for children ages 2-8; but most children will be beyond this level by age 8. Though the graphics are excellent, the most outstanding aspect is the talking teacher who gives directions and sounds out the letters; "he" uses a clear, understandable male voice. When the child responds too slowly, the voice says, "If you need help, press any key." However, rather than repeating the sound when the child responds incorrectly or too slowly, the voice says to move right or left on the keyboard. Children this age don't know right and left! In addition, they have a short attention span, so they are likely to have forgotten the letter by that time. These programs have several other pedagogical flaws. They are an excellent example of a good basic idea that could have been terrific had the writers conferred with primary school teachers and learned about this age child, what is taught, and how. Further examples of this problem include the hand that writes the letters - it writes them from right to left, backwards from the way first graders are taught!

Another problem is the word list. These are not words taught to first and second graders; some are 5th, or 6th, grade level. Many represent concepts difficult for this age to understand, such as urchin, oboe, cyclops, kiwi, tyrannosaurus, and nightingale ... whatever happened to cat and dog? Then there are the letter

sounds: the program mixes hard consonant with soft consonant sounds with the same letter, such as the "g" in goat and giraffe; too confusing for beginning readers.

Nonetheless, I still RECOMMEND this disk for home use because children will enjoy the great graphics, the fact that the computer talks to them, and children will learn letter sounds in most cases. But next time, Firebird, please call a teacher! Elizabeth A. Kaspar.

---

## Wordprocessors

---

**SPEEDSCRIPT UTILIZER:** \$19.95 enhancement on disk for *Speedscript* V3.0 and higher on the C64. *Speedscript* not included. From Chipmunk Software. DOS protected.

*Speedscript Utilizer* will print multiple copies of a *Speedscript* document and will merge a text file and a data file to print individualized form letters.

The disk doesn't come with a manual, having four pages worth of instructions on the disk instead. I like having the instructions on the disk where they are in easy reach when I need them.

When you create the data base with *SpeedScript*, press <RETURN> after each field, and press <RETURN> between records. *SpeedScript Utilizer* is limited to nine fields per record, which will usually be enough.

When you are satisfied with the data base and the form letter, do a sequential save ('<SHIFT><CONTROL>p'), then press 'd' to save the documents to disk in a sequential file. Then exit *Speedscript*, load the utilizer, and load the two documents into the utilizer. Then sit back and watch.

When you create the documents with *Speedscript*, it is a good idea to do regular save as well as a sequential save because *Speedscript* cannot load sequential files. RECOMMENDED. W. H. Lambdin.

**SPEEDPAK:** \$17 enhancement on disk for *Speedscript* 3.0 - 3.2 on the C64. *Speedscript* not included. Distributed by Upstart Publishing. Not protected.

This is the most complete package I have seen for *Speedscript* 3.2. Best of all, after you create your customized copy of *Speedscript*, the **Speedpak** disk is no longer needed unless you want different fonts or help screens. The table below shows what could be available the next time you activate *Speedscript*:

- ASCII conversions;
- Dvorak keyboard;
- Alternate screens (useful with mail merge utility);
- Mail Merge - to merge a mailing list with a form letter, it is RAM based and has no long waits for the drive to access the names;
- Four different fonts with your choice of solid or underline cursor;
- Four different help screens with the option to make your own;
- Encryption of document files using key codes up to 32 bytes long;
- Storage device (disk or tape) defaults and printer defaults;
- Cut and paste between two documents.

After these utilities are added, the buffer is cut down to under 38,000 bytes, and the length of *Speedscript* on disk goes from 25 to 53 blocks. But who worries about disk space now? The only trouble I found is that the encryption utility will corrupt document files over 100 blocks long. HIGHLY RECOMMENDED. W. H. Lambdin

**FLEET SYSTEM 4:** \$79.95 word processor and database programs on disk for the C128. By Jacques LeBrun, from Professional Software. DOS protected program disks. Requires 80 column monitor. 17xx RAM expansion optional.

Wow! This package has come a long way since I reviewed *Fleet System 3* (Issue 31, p4), which was a basically good word processor plagued by the way some of its features were implemented. **Fleet System 4**

has overcome any problems I had with its predecessor and gone a long way further.

**Fleet System 4** is keystroke command driven and post-formatted, very similar to *Superscript*, *PaperClip* and *WordPro*. Users familiar with any of these word processors would have no trouble learning **Fleet System 4**.

The standard features are present and work well: text margins, header and footer margins, relative margins, search with or without replace, variable block filling, automatic page numbering, and all the other functions required to make a word processor useful. It allows about 600 lines of eighty column text in the main area, 40 to 100 lines in extra text (depending on whether or not help screens are active), and, of course, file chaining. **Fleet System 4** also provides virtual one-hundred and twenty column screen editing, which can be handy for wide columnar data.

**Fleet System 4** really shines with its spelling checker, thesaurus, and support for the RAM expansion. The RAM expansion is treated as a disk drive to which you can copy any files from disk or use for temporary storage of files. It is most helpful when the dictionary and thesaurus are copied onto the RAMdisk, making these functions incredibly fast.

The spelling checker will go through a document in a matter of seconds. A nice touch here is that **Fleet System 4** will automatically check for duplicate misspellings, requiring that you type in the correct spelling only once. The dictionary is supposed to contain about 90,000 words, and a user dictionary can add at least another 10,000.

The thesaurus is the most impressive feature. Simply give **Fleet System 4** the word - either keystroking it in, or hitting the <UP-ARROW> to get it from the cursor position within the text - and the program will give you anywhere from 0 to 40 synonyms or antonyms. If the thesaurus is on disk, this may take several seconds; if it is on the RAMdisk... it's fast. To select a word from the provided list, you need only place the cursor on the word,

hit <RETURN>, and *Fleet System 4* will automatically place it in the document at the cursor position, replacing the original word if it was given from the text. Mr. LeBrun has done an absolutely beautiful job with both the dictionary and the thesaurus.

The program still has a few weak points. My *Fleet System 3* dictionary disk came corrupted. So did my *Fleet System 4* dictionary disk. I have managed to get it working by lopping off all the words starting letters with "pu" on. A nuisance, and it will take a few documents and eat up some user dictionary space to get words like "the" and "word" into the dictionary, but it does not cripple the program. The program offers numeric tabs with column arithmetic that falls just a bit short of the most desirable decimal tabs. *Fleet System 4* moves all the numbers, decimal points, etc., to the left of the tab. Thus if you try to add '12345.67' to '987.6', you will end up with garbage. All numbers to be added must have an equal number of digits following the decimal point.

*Fleet System 4* does not have any reformatting function, which makes it hard to get rid of extra spaces. This is complicated by a feature which automatically inserts forced spaces any time there is more than a single space preceding the current cursor position. While this has advantages in certain situations, it can cause lines to start with a space.

The printer support is good, but not exhaustive. Fortunately, *Fleet System* allows both the modification of existing printer file and the definition and use of special characters. The explanation of printer files and special characters is pretty standard - sufficient if you have some idea what is going on, but confusing if you don't. There is no support for proportional spacing.

File support is strong as well. Although I am irritated by USR (screen code, in this case) files, *Fleet System* also supports the output (with leading quotes) and input of PETSCII sequential files, and the output of ASCII sequential files.

The manual really needs some work. I

found in the manual several references to a nonexistent appendix called "User Hints" which was supposed to tell me how to copy the dictionary and thesaurus to the RAMdisk. There are no instructions in the manual on how to do this. Using the help screen, I found a wonderful little function that allows the user to copy most files from any disk drive to any other, including copying the dictionary and thesaurus to the RAMdisk. But the dictionary and thesaurus are REL files, which can cause trouble for many copy programs, and the *Fleet System 4* file copy command would not copy REL files from one floppy to another, nor from RAMdisk to a floppy. Fortunately, and surprisingly, the "UNI-COPY" that comes with the 1571 TEST DEMO disk allowed me to copy both of these files to a double sided disk.

The *Fleet System 4* package also includes a fairly simple RAM based filing system, *Fleet Filer*. *Fleet Filer* is easy to use, very fast, provides for file integration and extraction with the word processor, and offers simple math routines. It is more than adequate for most simple mailing lists, but is probably not sufficient for complex applications or very large data bases.

All in all, I am very impressed. The standard features are there with no major surprises. If it had only these, *Fleet System 4* would be average and a bit overpriced. The spelling checker and thesaurus, however, are unsurpassed and make an excellent writing tool of an average word processor. For simple word processing, many users might be better off the with *Pocket* series; for fancy fonts, look to *GEOS* or to *FontMaster*; but if you are most concerned about getting your message across with words, the dictionary and the thesaurus of *Fleet System 4* really shine. HIGHLY RECOMMENDED. Tim.

**SKIWRITER:** \$15.95 word processing program on disk for the C64. From Mastertronics. DOS protected. No statement of warranty.

When I first bought my computer and a word processor program, I was so enthralled by the ease of use of word processors that I told people who didn't use them that any word processor would be terrific. Now I know that some word processors are more terrific than others. I have been using *SkiWriter* since last December, and I'm impressed. It's blazingly fast. The program doesn't seem to slow down even when I insert text near the beginning of a fairly long document. It's menu driven, but it avoids icons that take up large amounts of screen space. You can look at 21 lines of your text. The function keys for previous screen and next screen and top of file and bottom of file work instantly. It's amazing that you can do that on a C-64. And I needed a word processor that wrote and read sequential files.

*SkiWriter* is easy to learn to use and has very good help screens. I love the fact that the printed documentation is only 3 little pages which you don't actually need because the help screens are so good. I started word processing almost immediately instead of spending hours reading a book about a program.

I'd been using Cardco's *Write Now* cartridge and Compute!'s *Speedscript*. The *Write Now* cartridge is sssllloooooowwww. I didn't realize that slowness could be bothersome in a word processor until I got *Speedscript*. *SkiWriter* is even faster.

But there are some problems with release 1.0. There is no <TAB> key in the program. I accidentally discovered that a <CONTROL>I will move the cursor eight spaces, but a single-key tab would be nice. In edit mode, the 'next screen' (F7) and the 'previous screen' (F5) are absolutely terrific, but they work poorly in the 80 column preview mode.

There are a few features that I'd like to see in this program. I should be able to look at the entire disk directory rather than just the sequential files. I

should be able to set up place markers so that I could zip around the file without using the more cumbersome search feature. It would be really nice to be able to give DOS commands from within the program. There is no fastloader or fastsaver in the program, so we're stuck with the slow speed of the 1541. I'd also like to have a predone file of 30 printer control "dot lines." In *SkiWriter*, I can only have ten at a time.

Since lots of school kids use a C64 for term papers, there should be a provision for footnotes to be put in at the bottom of the page.

Finally, there should be a way to chain files on the disk together so that a document that is too long to fit in memory could be printed out without the user having to sit there loading each chapter separately.

This is a terrific program for someone who doesn't use word processing every day. It's so easy to use that you don't need to keep reviewing the book to see how it works when you haven't used it for a while. It has space for only 22,000 bytes (about 3600 words), but that's plenty for the casual user. HIGHLY RECOMMENDED. Henry Farkas.

---

---

## Animation

---

---

**CYBER VIDEO:** \$39.95 graphics and music animation utility on disk for the C64. From Touchstone. Joystick or KoalaPad (or compatibles) required.

The *Cyber Video* demonstration at the San Francisco Commodore Show in February had me convinced for two days that it was an Amiga program. The impressive animation with music was the most sophisticated I had seen on the C64, and it made me eager to see my artwork in motion.

The unprotected program disk contains three modules - Music, Graphics, and Animation - on one side of the disk.



Demonstrations are on a second disk. Each program uses drop down menus and there is a blessed, quick, mobility between all modules, with disk swapping only for files. A file converter changes *CV* graphics to a *Doodle!* format so you may use a printer dump. The authors give permission to copy and use four "run time" files that create self running slide shows, animations, and music programs.

The documentation of *Cyber Video* is its Achilles' heel. Not for lack of generosity on the programmer's part, but because their enthusiasm confuses you with extraneous information and not enough nit and grit. It was difficult to distinguish "pilot error" from program bugs with such poor verification of procedures.

Fully one-half of the 103 page manual is devoted to the music program. It concentrates on a very comprehensive introduction to music theory and the SID chip, giving short shrift to the mechanics of the extensive program features. Since there is no way to import music from other sources, like *SID Player's* huge library of public domain music, you are up the proverbial creek if you have no musical skills.

The graphics program includes the now familiar commands DRAW, CIRCLE, LINE, etc., plus new features relating to animation. Though I prefer a lightpen, I found the *Koala Pad* surprisingly steady and I could import black and white Flexidraw graphics after converting to Doodle! format. The high-resolution color is the usual painstaking process similar to *Flexidraw*. *Cyber Video* offers fills, alpha-numeric typing over graphics for subtitles and dialog, and a sprite editor. The documentation is sometimes contradictory. Page 59 says that there are two work screens, while page 67 mentions a mysterious third.

The complex and powerful animation program is wickedly confusing. Since the few illustrations are all in the music section, you must rely on incomprehensible instructions. The authors use fragments of their own demonstrations which they admit took weeks to produce, and then muddle you

with explanations of their developmental processes. The package needs a tutorial with one simple three color animation, and one sound effect you could reproduce, step by step, with drawings or photos of each screen for reference.

Even short film animations are usually time consuming collaborations of several musicians, artists, and technicians. *Cyber Video* might be most effectively used in a group or classroom effort. It is a serious tool, not a toy, and therefore will have a limited audience. But, with the 1764 memory expansion released, it has great potential. I hope to see the authors produce a clear manual and input drivers for the *Flexidraw* lightpen and the 1351 mouse to match the inspiring, creative power of their program. A QUALIFIED RECOMMENDED. Sue Albert

---

---

## Music

---

---

**BACH:** \$9.95 classical music on disk for the C64. First in the series of Striders Classics by Lorne Strider, from Chipmunk Software. Not protected.

This disk has 15 pieces of music written by J.S.Bach. The two part harmony pieces play anywhere from ten seconds to seven minutes, thirty five seconds.

While the music plays, the program also gives quite a bit of information about Bach's life.

If you select the first piece of music on the disk, the other pieces will automatically load and play. The music is interrupt driven, and the sound quality is good. The only fault with the program is that the text stays on the screen about 15 seconds after the music stops. The disk also gives hints on getting better quality sound by using headphones or running the sound through a stereo system.

Disks in this series are release about once a month. Each disk comprises the work of a different composer. If you like



classical music, I HIGHLY RECOMMEND this disk. W. H. Lambdin

**MOZART:** \$9.95 classical music on disk for the C64. Second in the series of Striders Classics by Lorne Strider, from Chipmunk Software. Not protected.

This disk has 5 pieces of music written by Mozart, which play for five to nine minutes. Very similar to *BACH*, above, except that it does not have the bug with keeping the text on the screen. As above, HIGHLY RECOMMENDED. W. H. Lambdin

**VIRTUOSO 64:** \$29.95 music editor on disk for the C64. By Jeff Johnson, from Chipmunk Software. Heavily DOS protected.

This package allows you to write interrupt driven SID music that can be played while BASIC or machine language programs are running. It is not a simple utility to use, but with time and patience you can learn to use it well. The instructions and twelve pieces of music are provided on the disk, and a help screen explains the program's use.

You may use whatever time and key signatures you wish. Ties and slurs are linked automatically, and the program provides a full range of nine octaves. The screen displays only one measure at a time. You can play the entire piece of music, or just the measure on the screen. There is no way to dump a score to the printer. As the music plays, the program keeps you informed of which measure is being played. There are no high-resolution graphics in this program. If it did have hi-res graphics and a printer option, I would give it a "highly recommended." RECOMMENDED. W. H. Lambdin

---

---

## Languages

---

---

**SCREEN EDITOR:** \$2.99 (+\$2 shipping and handling) machine language subroutine for the C64. From Abby's Discount Software. Not protected, disclaimer liability, no warranty.

I had wondered for a long time just why anyone would pay for a Screen Editor for a Commodore 64. I mean hey; I thought it came with about the BEST editor around? Well, when the price dropped to \$2.99, I figured I could afford to satisfy my curiosity! The *Screen Editor* is not for editing BASIC program; it is 16 blocks of machine language code that resides at the popular 49152 (\$C000) free RAM. It allows you to handle your BASIC INPUT routines more elegantly with control over the type of data received and the formatting capabilities of PRINT USING. You can limit the length of a field, ignore dashes, commas, slashes, and non-numeric keys in numeric fields, and quotes in string fields, and include commas, colons, and semicolons in string fields! <SHIFT><CLR/HOME> clears the field and not the screen! You can allow status lines at the top or bottom of your screen, set colors, and disable the <RUN/STOP> key. More importantly, it keeps the cursor restricted to the input fields (no more prompts being picked up 'cause the cursor moved off the line or other nasties; the cursor just goes to the previous or next field!)

It is not, however, a screen design aid allowing you to easily set up and move your fields around the screen like some database programs do; you must still position the cursor through your own code before you turn the input chores over to *Screen Editor*.

The documentation, including a two page BASIC program example, is only 10 pages, but seems adequate. The example was

obviously entered in lowercase/uppercase. Fortunately, the example is also on disk so you can print (or look at) the example in readable form and, better yet, run it. This is the way to get a feel for what this software can do. For this product, YOU will have to decide about YOUR need for this type of software! It can be a help for formatting input routines ... do you need it? Only YOU can answer that one! If you are frustrated by the limitations of BASIC's INPUT statement, and would like FAST, WHAT YOU SEE IS WHAT YOU GET, CRASH PROOF (I think), input for your BASIC programs that can beautifully handle those nasty little things like \$.00, then this might be the time to part with \$2.99. I would be surprised if this offer lasts long. [RECOMMENDED?] Rick Crone.

**BASIC 128:** \$59.95 BASIC compiler on disk for the C128. By Thomas Helbig, from Abacus Software. DOS protected. 40 or 80 columns, 1541 or 1571 drive.

**BASIC 128** will compile almost any program written in BASIC 7.0 into pure machine language, compact p-code, or a combination of the two. If you compile a program in p-code, it will run approximately 10 to 15 times as fast as the original program. Programs compiled to ML will be about 20 times to 30 times as fast.

I have compiled a BASIC terminal program that would only transmit at 300 baud, and it now has no trouble communicating at 450 baud with a 300 baud modem. I also compiled a hi-res screen dump. It used to take nearly 5 minutes to dump, now it does the same job in 55 seconds.

Very long BASIC programs should compile to p-code 20% to 30% smaller than the original program.

When you exit a compiled program, there is no way to RUN the program again without reloading it.

The manual is 84 pages, and it has lots of help for the novice. It covers almost every option in this package, but none are

covered completely.

(If you can write a program in BASIC and make it execute at near the speed of machine language, why bother to learn machine language?) HIGHLY RECOMMENDED. W. H. Lambdin.

**ASTROCOMP:** \$Public domain[?] BASIC program compiler.

**Astrocomp** will speed up your BASIC programs and reduce garbage collection delays. It is apparently from Germany, and the error messages do not help me much in finding the errors. **Astrocomp** is easy to use and seems to handle most anything I code. If you code works in BASIC, it will probably compile OK. The best thing (besides price) is that your object code is smaller than **PETSPED** or **BLITZ**, and **UNBLITZ** will not disassemble it. It is not as fast as **PETSPED**, not even as fast as **BLITZ**, but for some applications, the time savings of loading smaller object code can make it the better compiler. For BASIC programmers that need a bit more speed, HIGHLY RECOMMENDED. Rick Crone.

## Now available on microfilm and microfiche.

Only the finest, most respected publications are on microfilm and microfiche.

Bell & Howell chooses only those publications with the highest reference or research value to be made available on microfilm and microfiche. This publication, among many other respected titles, has been awarded that honor.

Call or write Ms. Pam Shea, Quotations Editor  
Bell & Howell, Micro Photo Division  
Old Mansfield Road, Wooster, OH 44691  
or call toll free 1-800-321-9881.  
In Ohio call collect 1-216-264-6666.

Please send complete information about microfilm and microfiche.

Title of Publication \_\_\_\_\_

Name \_\_\_\_\_ Title \_\_\_\_\_

Company \_\_\_\_\_

Co. Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

**BELL & HOWELL**  
MICRO PHOTO DIVISION

---

## Games

---

**PRO BOXING:** \$5.99 arcade game on disk for the C64. From Artworx Software. DOS protected, no statement of warranty.

*Pro Boxing* is a fairly good simulation of a boxing bout, with sound effects and all, for two players against each other or one player against the computer. With the latter, you choose the skill level of your opponent.

Initially, you can watch a three round demo. If you wish, you can change the number of rounds (3, 5, 7, 10, or 15). Each round is sixty seconds long.

The joystick controls your boxer's movement on the canvas. When you hit the fire button and move the joystick, you control the punches, fakes, and guards of your fighter. It takes some getting used to for anyone to master these movements, particularly against the higher skill levels of the computer.

The ring is well drawn, with the crowd gathered around. There is no referee, so anything goes. The clock counts down above the ring. After each round, you are given a list of vital statistics of both fighters.

This list tells you the percentage of strength left, the number of times each boxer was knocked down, and the condition of the right eye, left eye, nose, and mouth. There are eight conditions ranging from O.K. to bad cut. Bleeding cuts show on the boxer's face.

You can win by knockout, technical knockout, or by points. There are three independent judges which score a total of 21 points per round. Should the fight go the distance, this scoring determines the winner.

Scoring is dependent on your ability to land punches. You must try to catch your opponent with his guard down. Three solid punches will knock a fighter down, two

more and he's down again. Two serious facial cuts will yield a technical knockout.

All told, *Pro Boxing* is well done. The graphics are quite adequate and the action is what you make it. Playing it, however, is very hard on the joystick. AVERAGE. Dan A. Sieben.

**OPEN:** \$8.99 golf game on disk for the C64. From Green Valley Publishing. DOS protected, no statement of warranty.

*Open* is one in a series of *Load'n'Go* software products from Green Valley. Upon start up, a screen gives you the option to play or quit. Then it goes on to ask you if you would like to review instructions.

The instructions are worth reading carefully since *OPEN* comes with no manual. The course is a replica of the Royal St. George created by championship golfer Nick Faldo.

The game is for one player using either the joystick or keyboard. You can choose to play the front nine (out), the back nine (in), any individual hole, or quit. Your bag comes with nine clubs and a caddy.

"Why do you need a caddy?" you may ask. Well, he's useful to the inexperienced golfer. He will question unusual calls like using a putter on the fairway or in the rough, giving you a chance to change your selections.

The program has fairly good high resolution graphics. Small trees, bunkers, fairways, greens, and the road are well displayed. The golfer, his caddy, and a bag of clubs are also very well animated.

The lower part of the screen shows the hole number, hole par, shots this hole, aiming device, strength indicator, an area to select hole if not playing 9 or 18, and an area to choose to view of the hole from above.

An area in the top right hand corner displays wind speed and direction. This factor is ever changing, even while you are swinging the clubs.

To play, you first chose the club, then

direction and strength of the shot, and finally pressing the fire button begins the golfer's swing. You can fine tune the shot during the swing by pushing the joystick up or back (more or less distance) or side to side to alter the direction.

The course is as difficult as the real one. However, the bird's eye view option is often not available when you are actually out on the course. This program will provide a good challenge even to the pros. RECOMMENDED. Dan A. Sieben.

**PRO GOLF:** \$11.99 golf game on disk for the C64. From Mastertronic. DOS protected, no statement of warranty.

**Pro Golf** provides some great 18 hole, 3D golf. The view of the game is from behind the golfer, just as in real life. It can be played by one or two players and has the option of playing single holes for practice.

The golfing is controlled by the keyboard or joystick. It is a par 72 course and comes with complete instruction manual containing a map of the course and individual hole statistics. It also states the various club ranges.

Superb is the only way to describe the graphics: trees, water, greens, fairways, sand traps, even a car (in the parking lot, should you hook one over there), a boat in the river winding throughout, and, of course, the club house at the last hole.

A bag of 13 clubs are displayed along with the golfer, except when putting - no carts allowed on the green! You choose the club, aim in the desired direction, and control the swing. Hooks and slices result from delays between the back and foreswings.

The bottom quarter of the screen is used to display the vital stats. The hole number, hole par, hole distance, wind direction, and strength, strokes this hole, running stroke tally, and the over/under par score are shown. The wind indicators change to tilt indicators when

on the green.

When you come within 12 yards of the hole, you are given an overlay in the lower right corner of the screen. It is a bird's eye view of the green and helps tremendously when making a putt.

Many golf simulations are played viewing the course from above, which is not a very good representation of the real game. In the real game, you will not always be able to see the flag as you look down the fairway because of distance, a rise, dog-leg, or whatever.

Playing this course is as close to the real thing as possible. It is a masterpiece of software. Mastertronic has come through again. HIGHLY RECOMMENDED. Dan A. Sieben.

**MARBLE MADNESS:** \$29.95 arcade game on disk for the C64, Amiga, et. al. From Electronic Arts. One or two players, joystick controlled, DOS protected, 14 day money back guarantee.

This object of this game is very simple - race your marble to the goal line - and the difficulty is rated as Introductory - do not let anything get in the way. It sounds easy, but you just might go nuts trying to complete this simple task. The raceway is a fantastic 3-D terrain where enemies await your every turn. You must avoid the deadly steels, the pounding hammers, and watch out for the marble munchers.

The home computer version features the same exciting gameplay as the original arcade version, with the same great graphics, sounds, and music. **Marble Madness** is sports competition, kinetics, and strategy rolled into one. This version also offers an all new secret level. Each level has its own personality, creatures, and original music. Average playing time is about 30 minutes per game. HIGHLY RECOMMENDED. Tony A. Tompkins.

**PURE-STAT BASEBALL:** \$49.95 statistical simulation program with graphics, on disk for the C64. From subLOGIC, DOS protected. Joystick optional. Supplemental *Stadium* disk also available (\$19.95).

Attention baseball FANatics, check this one out! *Pure-stat* is definitely what the name states, pure statistics. Some very nice graphics are added to dress up the game, but *Pure-stat* is not an arcade game and it will be attractive to baseball minded computerists.

About two years ago, I purchased *Computer Baseball* from Strategic Simulations Inc. (SSI) and have loved it ever since. *Pure-stat* is a major improvement over SSI's game. It has many more features such as trading players among teams, printing stats and others. Graphics show the computer's decision for each play add a certain touch of realism that SSI's program lacked.

You, the player, get to pick your favorite team from the 1985 season or one of the ten best teams ever to play. You also have the choice of playing the game in Yankee Stadium, Dodger Stadium, or a make believe subLOGIC Stadium. Once that is done, you act the part of manager and decide how to play both defense and offense. The authors of *Pure-Stat* went to the trouble of including almost all of the choices today's real managers make at the ballpark.

On defense, you can have your pitcher intentionally walk, pitch around, or pitch cautiously to a batter. You set how your infield plays (in tight, guard the corner, etc.) and also set the outfield. When at bat, you can have the batter bunt safely for a sacrifice, bunt for hit, hit behind the runners, or even swing aggressively. The choices are too numerous to mention and the program has to be played to be appreciated.

Every now and then the screen would go crazy on me, but would eventually get back to normal. The long disk load drives me insane and a fast loader would do wonders for the marketability of *Pure-stat*.

I could almost write a book about the

features of the game and HIGHLY RECOMMEND it to all baseball stat freaks. Don't buy it if your looking for an arcade game; you'll be bored. In my opinion, *Pure-stat* is a masterpiece! Mike Stout

**AUTODUEL:** \$49.95 strategy/adventure game on disk for the C64. From Origin Systems. Distributed by Electronic Arts.

If you've ever been the victim of a road hog or encountered some other form of strange highway life, you probably enjoyed the movie 'Road Warrior'. You'll also enjoy the computer game of *Autoduel*. As a driver in the far distant future, the freeways belong not to the best drivers, but to the driver with the toughest vehicle, the best weapons, and the most skill in using them.

As a new player, you have 50 points to divide among your three basic abilities: Driving Skill, Marksmanship and Mechanical Skill. Each is very important and each can be improved by experience (if you live long enough). You also start out with \$2000 cash, perfect health, and no prestige. Your first task is to go to the Truck Stop and buy some body armor and then off to the Arena to earn enough money to start building your car. You can practice by yourself, engage in Amateur Nite competition or engage in a full-fledged free-for-all in the Unlimited Division. If you're lucky enough to survive, you'll soon have enough money to start building a real battlewagon.

Your next stop will be the Assembly Line. Here you can have a new car custom-made to your specifications from a series of menus describing some very extensive (and sometimes confusing) set of options. Then it's on to the Weapon Shop to buy weapons and ammunition.

There are all sorts of other interesting shops to visit in the various towns, including Joe's Bar where you can get the latest rumors. Once you get enough prestige and a good car you'll be able to pick up a courier mission. You might also choose to become a Vigilante or a



Traveling Arena Duelist .... each has its own satisfactions and perils.

Road Combat and Arena Combat differ markedly and each has its own set of rules and its own strategy.

The graphics are very detailed and impressive in the C64 version. The Amiga version is due out soon. The game comes with a fairly extensive manual which describes various game strategy and has an extensive section on vehicle control. This quite impressive game is much more than just a shoot-em-up. A lot of strategy and planning must go into this game. A good value for the money. -Art Lewis Kimball

**OGRE:** \$39.95 strategy/adventure/construction game on disk for the C64 and the Amiga. From Origin Systems, distributed by Electronic Arts.

The time is the 21st century. The *Ogre* - a cybernetic tank up which can be heavily armored and up to 50 meters long - is described as the ultimate weapon. It is entirely computer controlled and carries no crew. Depending on your point of view, the *Ogre* can be either the good guy or the bad guy.

This game depends almost entirely on strategy rather than any great skill with the joystick. The game pits the nearly indestructible *OGRE* against a more conventional fighting force of infantry, armor units, and command posts. The ultimate goal of the *Ogre* is to knock out the Command Post ... the goal of the conventional units is to defend it.

Most of the game play is controlled by menu options chosen with a keyboard, joystick or mouse. Game play takes place on a nuclear wasteland battlefield. A strategic map is available at all times, although only half the map can be seen at one time.

The game supports one or two players. In the one-player, version the player can choose to control either the *Ogre* or the armed forces, and in the two player version each player takes one side. Ten preset playing fields come with the game,

and you can use the Editor function to create your own battlefields and store them on disk. Game play can be saved and resumed at any time.

*OGRE* is based on a popular board game of the same name by Steve Jackson. It should be stressed that while the graphics are very well done, particularly on the Amiga version, these typical Strategic Simulation graphics are visual aids for planning strategy, not a close up view of exploding targets.

This game relies completely on strategy, not quick reflexes. It is definitely a thinking persons game and should be a big hit with anyone who prefers strategic simulations to shooting aliens out of the sky. **RECOMMENDED** for serious wargamers. -Art Lewis Kimball

**GULF STRIKE:** \$19.95 strategy game on disk for the C64. By Winchell Chung, from Avalon Hill. For one or two players, joystick required, DOS protected, 90 day limited warranty.

This is a computer version of the popular Victory Games boardgame of the same name. *Gulf Strike* examines a hypothetical Soviet invasion of Iran and possible U.S. responses. The screen is a 56x56 scrolling square grid map with each unit representing 28 km, covering Iran from the Caspian Sea to the Straits of Hormuz, Iraq to eastern Iran. The game lasts 25 turns, with each turn equal to two game days. The screen displays units as stars for U.S. and Iranian forces and a hammer and sickle for Soviet and Iraqi units. Soviet forces must seize 9 out of 25 objectives to win; the U.S. and her allies must prevent this. The game includes forces from the four principles, extensive air capabilities, carriers, submarines, armor, airmobile, engineers, artillery, special forces, and air defense. The terrain includes ports, desert, mountains, airfields, etc. The 24 page manual covers rules and information about the organization of each side's forces, weapons, and combat strength. Average

playing time is 12 to 20 hours, and it offers three levels of difficulty and a save game option. AVERAGE. Tony A. Tompkins.

**DREADNOUGHTS:** \$19.95 game on disk for the C64. By Thomas A. Dowell, from Avalon Hill. For one or two players, DOS protected, 90 day limited warranty.

This naval tactics game features the Bismarck engagement in the North Atlantic early in World War II. The tactical map has a variable scale offering 500 to 3500 yards per square. In the Bismarck Scenario, Germans raid convoys and must escape to a safe port. In tactical scenarios, the object is to destroy the opposing fleet. Data is provided for more than 40 major warships. The game includes air strikes and reconnaissance, convoys, damage reports, and radar. You can create your own tactical combat scenarios using the ships provided. You control the major weapons system for each ship. Average playing time is 2 to 6 hours per game, and it offers a save game option. AVERAGE. Tony A. Tompkins.

**CONFLICT IN VIETNAM:** \$27.95 intermediate level strategy game on disk for the C64. By Sid Meier and Ed Bever, from MicroProse. For one or two players, joystick optional, DOS protected.

This game covers five key battles of the Vietnam War. Based on the Crusade in Europe system, Battalion sized units are 1 mile per hex. A large scrolling hexgrid map covers the battlefield in detail. Units are standard symbols or icons. Background terrain changes from white to black at night. The game has simple mechanics; Units can move, attack, defend, or go into reserve; it is played in an accelerated real-time; units are rated for number of men, equipment, supply, formation, effectiveness, and experience level; and unit types include infantry, armor, helicopter, and others. The five

scenarios are: Dien Bien, Ia Drang, Khe Sanh, Cambodia, and Quang Tri. The 21 variants include both historical and hypothetical options. The lengthy manual includes historical commentary, example of play, and hints on how to play well. Also included are weather and 5 difficulty levels. Average playing time is 1 to 10 hours, and a save option is available. RECOMMENDED. Tony A. Tompkins.

**SUPER HUEY II:** \$... helicopter flight simulation game on disk for the C64. From COSMI Software.

*Super Huey II* is a helicopter flight simulator that offers six different missions to be flown.

In Renegade, a UH1X helicopter has been stolen by a madman who threatens to destroy all the bases in the area. You have to find him and and destroy him.

The Brush Fire mission takes place in the hills of California where brush fires have gotten out of control and are threatening homes.

In Gulf of Terror, you are on carrier duty in the Mediterranean. You have to identify which vessels belong to terrorists and destroy them.

Oil Fire also takes place in the Mediterranean, where an oil rig has been attacked by terrorists (possibly some you missed in the Gulf of Terror).

The fifth mission takes place in the legendary Bermuda Triangle where you are on weather patrol. No other information is given, because NO ONE knows what's going to happen there.

In Arctic Rescue, you'll face some of the most severe weather to be found anywhere. You have to find lost researchers and rescue them.

The graphics in *Super Huey II* are not the best I have seen, but they are quite adequate. My main complaint is that there is no 'practice' mode. Since there are a number of things that must be learned and done simultaneously to keep a helicopter in the air, it's nearly impossible to concentrate on flying and doing the

mission at the same time until you get some experience. A practice mode would allow the player to get some experience flying without the frustration of jumping right into the missions. AVERAGE -Art Lewis Kimball

**GUNSHIP:** \$34.95 game on disk for the C64. From MicroProse. DOS protected.

This is an attack helicopter simulation capable of defeating enemy tanks, infantry, and hostile aircraft on the modern electronic battlefield. *Gunship's* revolutionary 3-D graphics enable you, the pilot, to fly into the world's hottest trouble spots. You will use an unbelievable array of high tech information and weapons system including: lasers, video cameras, night viewers, radar warnings, jammers, computers, missiles, rockets, flares, and a 30mm cannon. Successful missions are rewarded with medals and rank promotions. Average playing time is 30 minutes to an hour. RECOMMENDED. Tony A. Tompkins.

**PHM PEGASUS** \$29.95 simulation/strategy/action game for C64 from Lucasfilm and Electronic Arts. Distributed by Electronic Arts.

*PHM Pegasus* is a Patrol Hydrofoil Missilecraft. These vessels are capable of incredible speed and maneuverability. The Lucasfilm/EA release starts with a training mission in which ten enemy ships come at you one at a time. This practice mission allows you to become familiar with the operation and control of the hydrofoil and its many sophisticated navigation and weapon systems. Following the training mission is a Graduation Exercise in which the same ten enemy ships come at you...but all at the same time.

After graduation, there are six other missions that can be chosen. Each mission has a specific objective and a time limit in which that objective must be reached. Ranks are awarded based on the number of

points earned in each mission. Points are awarded for enemies destroyed, enemies damaged and if the mission is successfully completed, points are awarded based on the number of minutes remaining.

The hydrofoil can be controlled from the Bridge or from the Operations Map. The bridge view is quite realistic and includes a close up view of the enemy through binoculars. From the Operations Map you can also control any auxiliary vessels (helicopters or convoy ships) that are available during that mission. From the bridge you can control a number of weapons ranging from a 76mm cannon to Harpoon Missiles.

The graphics and simulations in this game are quite impressive and realistic. Ships must be found using the Operations Map and Radar and then the craft must be steered so that the targets appear in the bridge view.

The package includes a very clear and well written manual which describes all the functions of the PHM Pegasus and a history of hydrofoils. There is also a set of cards which show the configuration, specifications, and capabilities of various vessels that you will encounter.

This is a very well-done simulation and goes far beyond the shoot-em-up arcade game. Another example of Electronic Arts' commitment to going one step further in providing exciting software that will provide many, many hours of enjoyment. RECOMMENDED. -Art Lewis Kimball

**XYPHUS:** \$14 fantasy/role playing game on disk for the C64. By Skip Waller and David Albert, from Polarware. For one or two players.

In this multi-character game, you command four characters trying to overthrow the evil lord of Arroya. Each character is rated for hit points, endurance, strength, weapons, etc. The game has six scenarios linked into one large game. Average playing time per game is 10 to 15 hours, and the game does offer a save option. AVERAGE. Tony A. Tompkins

**PHANTASIE II:** \$27 fantasy/role playing game on disk for the C64. By Winston Douglas Wood, from Strategic Simulations. One player, joystick optional, DOS protected, 90 day limited warranty.

This is a multi-character role playing game in which 1 to 6 characters search the continent of Ferronah for amulets and an enchanted orb that has been hidden by the evil Nickademus. *Phantasie II* use the same game system as *Phantasie*, and characters from the original game can be used in this sequel. *Phantasie II* also adds three new terrain types and rock tossing in combat. Average playing time is 30 to 60 hours per game, and it does offer a save option. RECOMMENDED. Tony A. Tompkins.

**NEVER ENDING STORY:** \$20 role-playing game on disk for the C64. By D.C. Ward, from Datasoft. One player, joystick controlled, DOS protected, 90 day limited warranty.

This role playing adventure game is based on the movie of the same name. A real time system uses a split screen display with graphics that illustrate your situation. The bottom half of the screen has text descriptions. You type in your actions in two-word commands as in typical interactive text games. As a character in the story, you must contact someone from the "Real World," and convince them that your make believe world really exists, and then you must return a medallion to a princess. *Never Ending Story* has three levels to solve. Average playing time is 10 to 20 hours per game, and it does offer a save option. AVERAGE. Tony A. Tompkins.

**MINDSHADOW:** \$20 adventure game on disk for the C64. From Activision. For one player, DOS protected, 90 day limited warranty.

In this combination text and graphics adventure, you awaken on a desert beach with a case of severe amnesia. With no memory and no past, you must travel from country to country examining clues to

discover where you come from and who you are. The game features over 80 screens, logic puzzles, plus a special help character to assist you when you get stuck. The average playing time of this intermediate level game is 5 to 10 hours, and it does offer a save option. AVERAGE. Tony A. Tompkins.

**MURDER ON THE MISSISSIPPI** \$23.95 graphic mystery adventure game on disk for the C64. By Adam Bellin, from Activision. For one player, joystick controlled, DOS protected, 90 day limited warranty.

In this adventure, you play the part of Sir Charles Foxworth, an English investigator and vagabond aristocrat. Accompanied by your butler, Regis Phelps, on a river cruise aboard the *Delta Princess*, you nose about and discover a body. You have three days to discover the criminal before the *Delta Princess*, docks in New Orleans. The screen displays characters moving, the various decks of the riverboat, the rooms, saloon, wheelhouse, and engine room. The game is entirely joystick controlled. Menu options allow you to question other characters, inspect evidence, take notes, etc. The game has four possible endings and a save option. Average playing time is 1 to 3 hours. RECOMMENDED. Tony A. Tompkins.

**ALTERNATE REALITY:** \$27.95 intermediate level adventure/role playing game on disk for the C64. By Phillip Price, from Datasoft. One player, joystick controlled, DOS protected.

This fantasy/role playing game is set in a city on another planet where you have been brought after being kidnapped by aliens. The object is to return to earth or seek revenge on your captors by dealing with other characters, exercising options that range from conversation to combat. *Alternate Reality* features real-time play, and 3-D scrolling graphics that show the city street, building interiors, and the

various characters you must deal with. Props include inns, taverns, banks, shops, smithies, healers, and guilds. Your character is rated for 7 different attributes. Average playing time is 30 to 50 hours, and a save option is available. AVERAGE. Tony A. Tompkins.

**MERCENARY:** \$19.95 introductory level adventure game on disk for the C64. By Paul Woakes and Novagen Software, from Datasoft. One player, joystick required, DOS protected, 90 day limited warranty.

This adventure game combines flight, air combat, negotiation, exploration, and searching for hidden clues. Your ship has crashed on a planet at war, and you must find a way to escape. You can become a mercenary to either side in the conflict to raise the money to buy a ship. The game has good 3-D graphics showing alien cities, underground complexes, and aerial views when you fly in combat. The game contains partial maps of the areas you must explore. You must fly your aircraft, search for clues, explore large complexes and cities, and negotiate with both sides for your services in war. You can try to work for both sides, but if either side discovers this, you are in big trouble. There are three possible ways to escape the planet. Average playing time is 5 to 15 hours, and a save option is available. NOT RECOMMENDED. Tony A. Tompkins.

---

## Hints and Tips

---

### COMMODORE NOTES

Word from Commodore in early March is that there have been some changes to the 652x chips used in Commodore products. The newer chips, which went into production late last year, change some timing and propagation delays. The advantage of this is that the Interrupt Control Register (e.g., \$DD0D) will no longer be cleared when the data is read [or something like that, I think. Tim]; the bad news is that the timing will be changed +/- one cycle on some operations. This will be transparent to everything except extremely timing-critical operations such as those used in various fast disk copy routines and extremely heavily protected software.

New ROMs for the 1541B are back from the mask shop, but are not yet available for general consumption. As of 5 March, samples of the new ROMs for the C128 have not yet come back. I have finally found out, by asking Commodore, what the C128CR is - the CR stands for "cost reduced," indicating that the computer will use 32Kbyte ROM chips instead of the 16Kbyte ROM chips used in the standard C128.

Also in early March, all the parts for the C128D, save for the 32Kbyte ROM chips for the integrated 1571D, have been gathered. It is expected that EPROMs will be used in place of ROMs for the initial production run. Also, Commodore has apparently decided, after some consideration, not to equip the C128D with a cooling fan on the grounds that it is not needed. The case may, however, retain a cut-out slot that would allow users to install their own fan. And, finally, there is some talk that Commodore will provide the C128D's 8563 VDC (80 column Video Display Controller) chip with a full



---

---

# Midnite Software Gazette

## The first Independent U.S. Magazine for users of Commodore brand computers.

---

---

64Kbytes of its own RAM - four times the RAM of the original C128. The extra 48Kbytes would allow multiple screens or multiple colors on a high-resolution screen. So if all goes well, the C128D might be available as, or shortly after, you read this.

The 80 column output of the C128 can sometimes be hard to read because the characters are so packed together. This is easy to remedy with a:

```
POKE54784,9:POKE54785,233
```

This does cause a bit of flicker, but not near so bad as that caused by a:

```
POKE54784,8:POKE54785,1
```

which sets the output to interlaced mode.

Commodore 1571 users have probably encountered some frustrating dead time while they wait for their drives to initialize single-sided disks. You can reduce the amount of dead-time and the number of clackety-clacks by:

```
OPEN15,8,15,"U0>RA":CLOSE15
```

The "U0>R\*" command sets the number of retries the drive will execute. Actually, almost any CHR\$( value may be sent to the drive, but "A" seems to give optimal results.

Programmers (and others) often need to preserve some data on the screen while examining other data. The BASIC 7.0 'WINDOW' command can be especially handy when the screen colors are reversed and multiple colors are used. For example:

```
<ESC> R      ;reverse screen color
CATALOG      ;get directory
<HOME>       ;go home
<TAB>        ;tab past directory
<ESC> T      ;set top of window
<SHIFT><RETURN> ;problems with setting
               window, see note
```

```
<CONTROL>8    ;set new window color to
               yellow
<CLR/HOME>     ;color the whole window
CATALOG        ;get and compare the other
               directory
```

That may look like quite a few keystrokes, but it is easy and quick. Do be careful, however, with setting the top of the window when data is present on the same logical screen line, in this case, the first screen line. If data is present on the line, it may be entered when you hit <RETURN>. Depending on what is there and what you are doing, this may just give a syntax error, but it could inadvertently enter a directory line as a program line.

### TODAY'S USER GROUP

*by Mike Stout*

Three or four years ago, computer user groups were sprouting up everywhere. Today, most groups are fighting to stay alive. In most cases, membership is down and the costs of running an effective club are rising. Should user groups be put on the endangered species list? I think not.

Just as the computer industry has experienced a major overhaul and only the fittest have survived, user groups also are now feeling the effects of the changes in our hobby's industry. Let's face it, some communities offered Commodore users the choice of many groups to join. As membership and interest faded, so did the need for so many groups. Then again, many areas in our country still do not have a Commodore user group.

What can be done to stop the decline in membership and attendance, the decline in interest in users groups? Well, I want to

---

# Midnite Software Gazette

## The first Independent U.S. Magazine for users of Commodore brand computers.

---

share a few of the things that our group has done to keep our membership stable.

Most important, the users group must provide services to its members. For example, our group purchased a MacInker and members can bring their fabric printer ribbons to the meeting and have them re-linked. We charge 25 cents and the member saves \$4-\$8 by not having to buy a new ribbon. Another thing that helps is for the club to coordinate group purchases of software and even diskettes - retailers are more likely to lower their prices if you are talking quantity.

Another service, and one of the biggest assets of our club, is our BBS. We charge our members \$10 a year for BBS rights. This money allows us to maintain and upgrade our system when necessary and possible and our BBS isn't a financial drain on our general fund. The BBS users pay their own way and non-BBS members don't subsidize our telecommunication habit.

The BBS facilitates day to day communication among our members. The monthly meeting and monthly newsletter make our group visible - but only twice each month between the two of them. The BBS keeps interest going each day. Many groups already have a BBS, but if you don't you should seriously look into it.

Another way to spur interest is to arrange interesting presentations. If your club has some capable members that can get up and speak intelligently about our hobby, you are fortunate. Not all groups have this luxury, and they must seek outside assistance. If this is the case, look around the area and see if other groups could get their members to come to your group and talk. Be sure to at least pay the speakers' expenses. One of the most popular things our group did was to buy the Butterfield VHS tape for beginners and show it at a series of meetings.

Also, publicizing your group's

activities in the local media is very important. Dropping off your monthly newsletters at the various retailers that support Commodore can get the word out to the public that you exist. Be sure and include the date, time, and place of your next meeting in anything left for public viewing.

If your group has problems, try out some of the above suggestions. What do you have to lose? Next month we'll address other areas of interest that could help you keep your present members interested and possibly add a few more.

**Abacus** P.O. Box 7219, Dept H3, Grand Rapids, MI 49510  
**Abby's** Discount Software 37 S. Broad St., Fairborn, OH 45324  
**Accolade** 20863 Stevens Creek Blvd. Cupertino, CA 95014  
**Activision** 2350 Bayshore Frontage Rd., P. O. Box 7287, Mountain View, CA 94043  
**Artworx** 150 N. Main St., Fairport, NY 14450  
**Avalon Hill** 4517 Harford Rd., Baltimore, MD 21214  
**Chipmunk Software** P.O. Box 463, Battle Ground, WA 98604  
**Compute!** P.O. Box 5406, Greensboro, NC 27403  
**Cosmi Software** 415 N. Figueroa St., Wilmington, CA 90744  
**Datascot** 19808 Nordhoff Pl., Chatsworth, CA 91311  
**Electronic Arts** 1820 Gateway Dr., San Mateo, CA 94404  
**Firebird** 74 N. Central Ave., Ramsey, NJ 07446  
**Green Valley Publishing**  
**Mastertronics** 7311B Grove Road, Frederick, MD 21701  
**MicroProse** 120 Lakefront Dr., Hunt Valley, MD 21030  
**Novagen Software**  
**Polarware** 2600 Keslinger, P. O. Box 311, Geneva, IL 60134  
**Prism Software** 401 Lake Air Dr., Suite O, Waco, TX 76710  
**Professional Software** 51 Fremont St., Needham, MA 02194  
**Strategic Simulations** Building A-200, 883 Stierlin Rd., Mountainview, CA 94043  
**subLOGIC** 713 Edgebrook Dr., Champaign, IL 61820  
**Touchstone** P.O. Box 1378, Coeur d'Alene, ID 83814  
**Upstart Publishing** P.O. Box 22022, Greensboro, NC 27420

TOGGLE DEVICE NUMBER, POWER-UP,  
AND  
WRITE PROTECT OVERRIDE ON 1541 DRIVE

written by Steve Boal  
in cooperation with  
Larry Eamer and Eric Woolsey

[NOTE: The performance of the procedures described in the following article void any and all warranties for the equipment on which the procedures are performed. Further, the performance of these procedures can, and if done improperly, will, damage the equipment on which these procedures are performed. Neither the **Midnite Press**, nor **Micro-PACE**, nor any of the authors will be liable or responsible for any results arising, directly or indirectly, from the performance of these procedures. All risks are to be assumed by the owner of the equipment on which these procedures are performed, and by the person performing these procedures.]

Do you use more than one 1541 drive? Or maybe a 1541 and a 1571? Or, maybe you have two Commodore systems, each with one drive, and you sometimes want to use both drives on one system. If you have two disk drives, you have probably noticed that some DOS protected software and some fast copy utilities will not always work when two drives are turned on. And if one of your drives is a 1571, you may have noticed that some DOS protected software will not load from it at all.

Are you a C64 owner who uses one or more 1541 disk drives to access your programs, text, and data files? If so, have you often wished you could power-up the drive from the front rather than fumbling for the on/off switch located at the rear of the unit? If you own two disk drives you know the practicality of changing the device number of one of the drives to "9" so that the two drives do not interfere with each other. But, if you make this a permanent change through the

hardware you may experience occasional to frequent inconveniences when you need the "9" drive renumbered to "8". Furthermore, do you need to notch each floppy disk so that you can flip your floppy disk over and use the reverse side?

If some of these scenarios sound commonly familiar there is help available. You can control all three of these functions-power on/off, select device #8/9, enable/disable disk drive write protect-by toggling these functions from the front of your 1541!

The tools necessary to make these enhancements to your 1541 disk drive include:

- an electric drill;
- 15/64 inch drill bit;
- an xacto knife;
- small phillips head screwdriver;
- wire-28 gauge zip cord
- 25-30 watt electric soldering iron;
- electrical rosen core solder;
- electric tape;
- epoxy glue
- wire stripper; and
- 5/16 inch wrench.

The parts you will need to buy from Radio Shack or competitor include:

- one bi-color LED (R.S. Part No.276-014);
- two SPST micro miniature toggle switches (275-624); and
- one DPDT micro miniature toggle switch (275-1546).

1. The first step to enhancing your 1541 disk drive is disconnect the power plug and cable from rear of the drive (Be certain that power to the drive is off) and turn upside down on a clean table or flat surface. Using a non-magnetic phillips screwdriver remove each of four screws near each corner of the drive case (see Figure 1). Turn the drive right side up and remove the top (lid) of the plastic case.

2. Next, remove the two screws on the left side of the metal shield which hold it in place (Figure 2). Then, carefully lift off the shield and set it aside.
3. Then, remove the six chassis screws; located at the two ends and middle of each side; mounted to the bottom of the case; and remove chassis from case (Figure 3).
4. Unplug the green LED plug (red and black wires) from the left side of main PC board (Figure 3).
5. Using the 15/64 inch bit drill the first hole in the bottom right front corner of the drive case for the power on/off toggle; the second hole in the upper left front corner of the drive case for the write enable/disable toggle switch; and the third hole in the upper right front corner of the drive case for the device number 8/9 toggle switch (Figure 4).
6. Trim the plastic ridges around the newly drilled holes where they interfere with the installation of the three toggle switches.

#### **POWER ON/OFF TOGGLE**

7. Turn the rear of the drive so that it faces you. Remove the two screws which fasten the power cord connector (where the power cord plugs into the disk drive). Carefully, pull power cord connector from drive (Figure 5).
8. Remove some of the black shrinkwrap from the white coated wire at the point where it joins the power cord connector.
9. Desolder the white wire from the power connector.
10. Cut a piece of wire cord 24 inches in length. On one end of the cord solder

one wire to the power connector and the second wire to the white wire. Wrap the exposed soldered joints with electrical tape (Figure 6).

11. Carefully route the newly soldered cord through the chassis to the right side.
12. Solder the opposite end of the wire cord to the left and right side of the SPST toggle switch (either wire) (Figure 6).
13. Insert the power on/off toggle switch in the predrilled hole in the lower right front corner of drive case and tighten the nut with a 5/16 inch wrench.

#### **BI-COLOR LED & WRITE ENABLE/DISABLE TOGGLE**

14. Locate the third connector on left side of PC board and the third and fourth wires from the front of the connector. Cut the third and fourth wire about one inch (or more) from the connector (Figure 7).
15. Cut a piece of wire cord 12 inches in length.
16. Solder the two ends of the third wire to a wire on one end of the wire cord. Next, solder the two ends of the fourth wire to the unsoldered wire at the same end of the wire cord (Figure 7). Wrap connections with electrical tape.
17. Then, solder the other end of the fourth wire/wire cord combination to the left middle lead of the DPDT toggle switch. Solder the other end of the third wire/wire cord combination to the left lower DPDT toggle lead (Figure 7).
18. Remove the green LED from the bottom front of the drive case by using an xacto knife to cut through the glue



holding it in place.

19. Cut the red and black wires from the green LED
20. Solder the end of the black wire to the center lead on the bi-color LED. Solder the end of the red wire to the unused middle right lead of the DPDT toggle switch (Figure 7).
21. Cut a piece of wire cord 12 inches in length. Then, solder a wire on one end of the cord to lower right terminal of the DPDT toggle switch. Solder the second wire of that end of the cord to the upper right terminal of the DPDT toggle switch (Figure 7).
22. Solder the opposite end of the first wire cord (#21 above) to the top (shortest) lead of the bi-color LED. Then solder the opposite end of the second wire of the cord (#21 above) to the bottom (medium length) lead of the bi-color LED (Figure 7). Wrap with electrical tape.
23. Insert the bi-color LED in the space in the case where the green LED was removed. Apply a small amount of epoxy to hold in place. You may wish to tape over the bi-color LED to hold it in place until the glue dries.
24. Insert the write enable toggle switch in the predrilled hole in the top right front corner of the drive case and tighten the nut.

#### **DRIVE NUMBER 8/9 TOGGLE**

25. Use xacto knife to sever the trace connecting the "half moon" pair of discs located nearest the front of the PC board.
26. Cut a piece of wire cord 12 inches in length. Then, solder a wire from one end of the cord to the left side of the severed "half moon" disc. Solder the second wire from the same end of

the cord to the right side of the "half moon" disc.

27. Solder the opposite ends of the wire cord to the as yet unused SPST toggle switch terminals.
28. Insert the drive number toggle switch in the predrilled hole located in the top left front corner of the drive case and tighten the nut.
29. Reassemble the chassis to bottom of drive case (six screws).
30. Replug the LED plug with the red and black wires to the left side of the PC board where it was originally unplugged.
31. Reassemble the metal shield (two screws) and the top drive case to the bottom drive case (four screws).

You are now ready to use your 1541 disk drive, enhanced with easily reachable power on/off toggle, device #8/9 toggle, and write protect enable/disable toggle. The purpose of the bi-color LED is to warn you when the write protect is disabled (red) and let you know when it is enabled (green). When you switch the device number toggle between #8 and #9 be sure to power off (toggle) and back on otherwise the drive device number will remain at the setting prior to being toggled.

You will quickly discover that not only do you not need to notch disks but now you no longer need to remove right protect tabs if you wish to modify the contents on a disk. You will need to be consciously aware of when the write protect is disabled (LED is red) so that you do not inadvertently alter the contents of a disk.

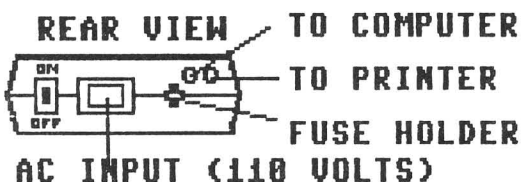
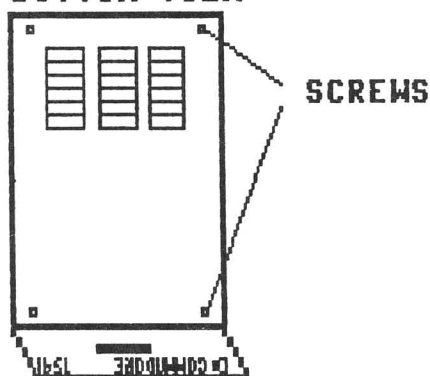
Test the operation the bi-color LED by using a previously unused unpunched backside disk. If you obtained a substitute bi-color LED from the one listed above it is possible that you may

need to reverse the wires to the two outside leads if the green light works in conjunction with the disabled write protect.

If anything fails to work properly disassemble the drive from the case as before and check your new wiring modified soldered connections. Warning-DO NOT PLUG DISK DRIVE IN TO ELECTRICAL OUTLET UNTIL IT HAS BEEN COMPLETELY REASSEMBLED.

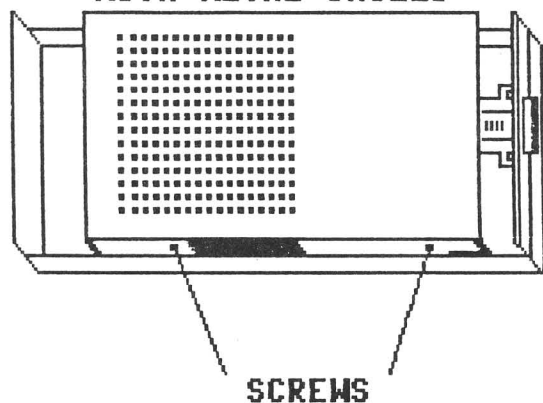
Happy computing!

**FIGURE 1  
BOTTOM VIEW**



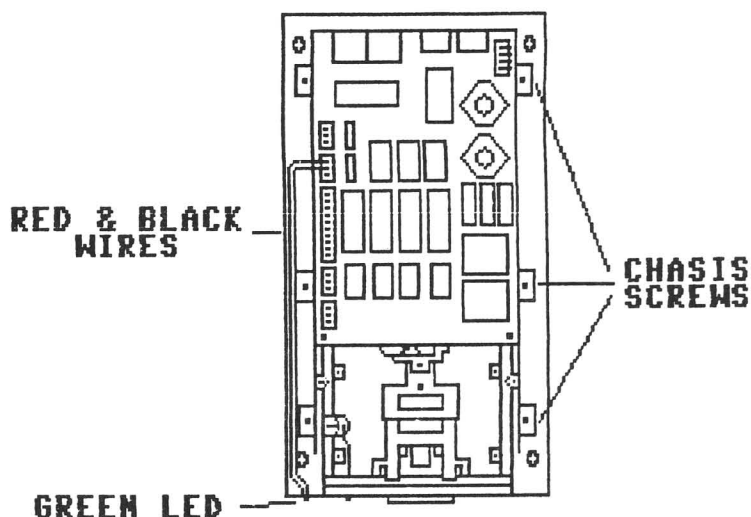
**FIGURE 2**

**SIDE VIEW OF DRIVE  
WITH METAL SHIELD**



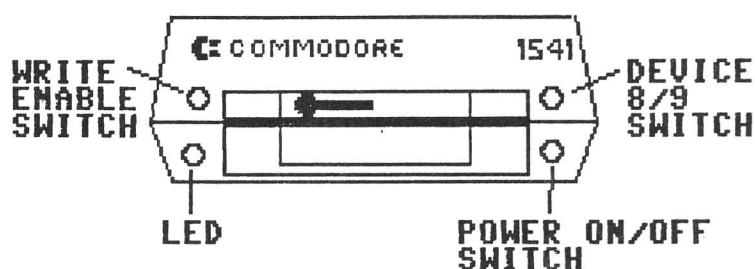
**FIGURE 3**

**TOP VIEW**



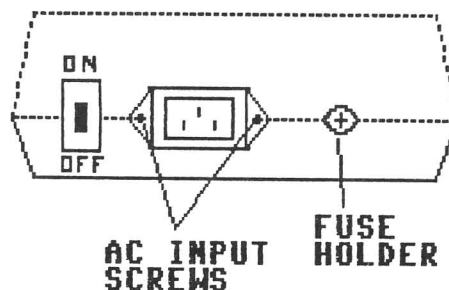
**FIGURE 4**

**FRONT VIEW**



**FIGURE 5**

**REAR VIEW**



**WILD CARD**

Be A Winner  
With

**BIG SAVINGS**

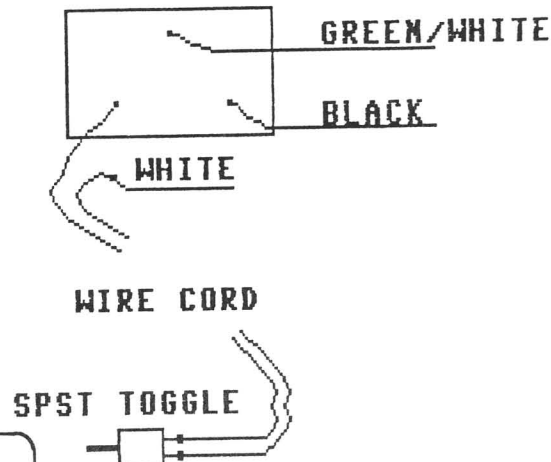
From Inkwell Systems

**Inkwell Systems**  
CREATORS OF PENWARE

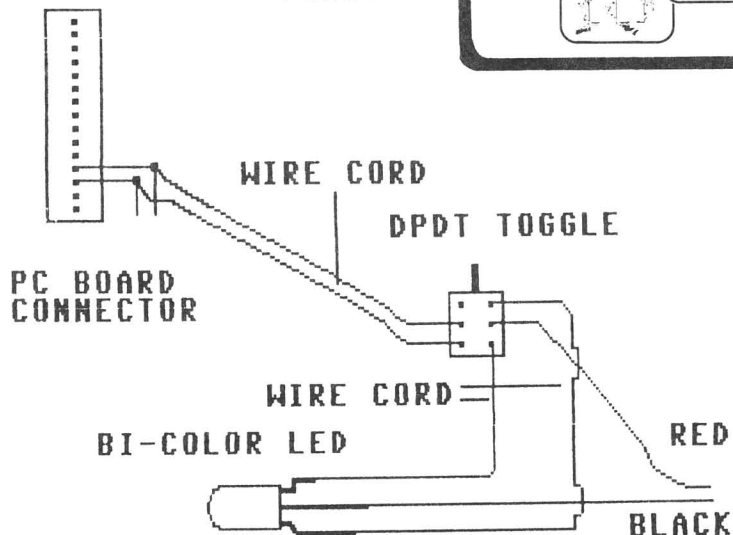
P.O. Box 85152 MB290 • San Diego, CA 92138  
619/268-8792

**DRAWING**

**FIGURE 6**  
**POWER CORD CONNECTOR**



**FIGURE 7**



**K NOW**  
**\$99<sup>95</sup>** *Limited Time*

**Flexidraw™**

**INTERACTIVE HI-RES GRAPHIC SYSTEM**

Complete package includes  
Professional Quality  
Light Pen and Software

- Use to create Artistic/technical drawings
- Print in 3 sizes
- Full two year warranty

**K**

**K INTRODUCING**  
**the Graphics Galleria™**

**\$24<sup>95</sup>**

A SERIES OF CLIP ART AND ILLUSTRATIONS  
FOR USE WITH  
*Flexidraw* AND *PODDER*

Now Available:

- HOLIDAY THEMES
- CLIP-ART POTPOURRI
- BORDERS & SIGNS
- MAPS OF THE WORLD

**K**

## HOW DOES IT RATE?

Overall Rating	A
Ease of Use	A
Documentation	A
Reliability	A
Error Handling	A
Value for Money	A

*COMAL Starters Kit rated by  
The Book of Commodore 64  
Software*

Performance	10
Ease of Use	9
Reliability	9
Documentation	8

*COMAL Starters Kit rated by  
The Best Vic/C64 Software  
(10 is highest possible rating)*

**Overall rating: \* \* \* \* \***

*Commodore 64 COMAL 2.0  
cartridge rated by INFO  
magazine (5 stars is the  
highest possible rating)*

**Overall rating: \* \* \* \***

*Commodore 64 COMAL disk  
(COMAL Starters Kit) rated  
by INFO magazine*

COMAL is a well designed  
programming language now  
available for Commodore:

**COMAL Starters Kit: \$29.95**  
**COMAL 2.0 cartridge: \$138.95**  
*(plus \$4 shipping)*

*Available soon for under \$100  
for these systems:*

IBM PC (March 1987)  
CP/M systems (March 1987)  
Apple MacIntosh (late 1987)  
Apple IIe / IIc (late 1987)

**COMAL Users Group USA Ltd**  
**6041 Monona Drive, Room 115**  
**Madison, WI 53716**  
**phone: (608) 222-4432**

## WHAT DO THEY SAY?

*"COMAL seems to be the ideal  
language to use in the middle  
school." - Robert Patry*

*"COMAL is the optimal  
educational computing  
language." - Jim Ventola*

*"If languages interest you,  
this one is well worth a look  
... You may find that it's just  
what you have been looking  
for." - Jim Butterfield,  
COMPUTE! magazine*

*"COMAL was just what I was  
looking for." - Colin  
Thompson, RUN magazine*

*"I don't have enough space to  
list all the good points!" -  
Noland Brown, Midnite  
Software Gazette*

*"I can recommend a better,  
faster, and cheaper  
programming language ... the  
most user friendly language  
around." - Mark Brown, INFO  
magazine*

*"Combines some of the best  
features of languages like  
Logo, Modula, Pascal, and Ada  
in an easy to use format." -  
Ahoy magazine*

*"COMAL seems to be bringing  
back an interest in  
programming." - G Stafford*

Find out for yourself. Just  
send us a 39 cent stamped  
self addressed envelope. We'll  
send you our 24 page COMAL  
information booklet.

## HOW DOES IT LOOK?

### Electronic Phone Book

```
1) Insert your COMAL disk in drive*.
2) Type LOAD ".*",8
3) Type RUN (starts COMAL)
4) Type AUTO (turn on auto line#'s)
5) Enter the program lines shown below
   (COMAL indents lines for you)
6) Hit «return» key twice when done
7) Type RUN
   e=enter f=find l=list
   f
   What name? COMAL
   COMAL Users Group 608-222-4432
```

```
dim name$ of 20, phone$ of 12
dim disk$ of 2
black:=0; white:=1; yellow:=7
background black
repeat
  pencolor white
  print "e=enter f=find l=list"
  case key$ of
    when "e","E"
      enter'name
    when "f","F"
      input "What name?": name$
      find'name(name$)
    when "l","L"
      find'name("")
    otherwise
      print chr$(147) //clearscreen
  endcase
until true=false //forever
//
proc enter'name
  input "Enter name : ": name$
  input "Enter phone: ": phone$
  if name$>"" then add'to'file
endproc enter'name
//
proc add'to'file
  open file 2,"phone.dat",append
  disk$:=status$
  if disk$<>"00" then
    close // data file not found
    open file 2,"phone.dat",write
  endif
  write file 2: name$,phone$
  close
endproc add'to'file
//
proc find'name(search$)
  zone 21 // set auto tab to 21
  pencolor yellow
  open file 2,"phone.dat",read
  while not eof(2) do
    read file 2: name$,phone$
    if search$ in name$ then
      print name$,phone$
    endif
  endwhile
  close
  print "Hit «return» when ready"
  while key$<>chr$(13) do null
endproc find'name
```

\* If you don't have COMAL yet, order a  
COMAL Starters Kit now. It includes  
the complete COMAL system, fastloader,  
over 500 pages of information (reference  
book, workbook, 6 newsletters), a pocket  
reference card, and 4 disks of programs.  
A bargain at only \$29.95 plus \$4 shipping.

# HOW TO GET THE MOST OUT OF GEOS™

— for the new user who wants to know more about GEOS and how to make it work for him;

— for the advanced user who wants more flexibility than GEOS alone offers;

— for the programmer who wants to write his own utilities

— the book you need when the manual is not enough;

*HOW TO GET THE MOST OUT OF GEOS* gives you the information that you need to use this powerful program to your best advantage. A team of experienced users and programmers examined GEOS inside and out to give you:

- shortcuts to make your work go faster and smoother;
- undocumented features that you will want to take advantage of, or avoid;
- translation utilities to import text and graphics from other popular programs;
- conversion utilities to let you transmit GEOS files to your friends via modem;
- the GEOS file structure, so programmers can write utilities for their own special needs; and
- a map of important memory locations so advanced programmers can create their own custom utilities.

GEOS is a trademark of Berkeley Softworks.



Comprehensive Reference

Book \$14.95

Complete Programs & Utilities

Disk \$9.95

Add \$2.50 shipping and handling  
Illinois residents add 6% sales tax  
C.O.D. orders additional \$2.00  
Make payable to Midnite Press

ORDER LINE:

**(800) 222 - 4441**



**Midnite Press**  
**Midnite Software Gazette**

1212 Hagan, Champaign, IL 61820

Dealer inquiries welcome

*Midnite Press/*  
*Midnite Software Gazette*  
Post Office Box 1747  
Champaign, IL 61820

BULK RATE  
US POSTAGE  
PAID  
PERMIT NO. 266  
CHAMPAIGN, IL